Configuring an IBM DB2 for LUW Resource in Metadata Manager 9.0
Abstract

This article shows how to create and configure an IBM DB2 for Linux, UNIX, and Windows (LUW) resource in Metadata Manager 9.0 to extract metadata from an IBM DB2 for LUW database.

Supported Versions

- Metadata Manager 9.0

Table of Contents

IBM DB2 for LUW ...............................................................  2
Configuring IBM DB2 for LUW .......................................................  2
  Database Heap Size. ............................................................  2
  Configure Permissions and Privileges. .................................................  3
Creating an IBM DB2 for LUW Resource. ..................................................  3
Troubleshooting for IBM DB2 for LUW. .......................................................  5
Reference. ....................................................................  5
  Objects Extracted. .............................................................  5
  Data Lineage for Database Management Resources. .................................  6

IBM DB2 for LUW

You can create and configure an IBM DB2 for Linux, UNIX, and Windows (LUW) resource to extract metadata from IBM DB2 for LUW. When you load the resource, Metadata Manager extracts schema details from an IBM DB2 for LUW database.

Configuring IBM DB2 for LUW

Before you create an IBM DB2 for LUW resource, you must configure the metadata source. If you do not correctly configure the metadata source, the metadata load can fail or the metadata can be incorrectly loaded in the Metadata Manager warehouse.

To configure IBM DB2 for LUW, complete the following tasks:

- Increase the database heap size.
- Configure permissions and privileges.

Database Heap Size

When you load metadata from an IBM DB2 for LUW database, you must increase the heap size. Otherwise, the S_M_ELEMNT_ATTR_EXTRACT session fails and returns the following error:

    DBA2191E SQL execution error.
    com.ibm.db.DataException: A database manager error occurred. :
    [IBM][CLI Driver][DB2/NT] SQL0973N Not enough storage is available in the
    "APP_CTL_HEAP_SZ" heap to process the statement. SQLSTATE=57011

This failure occurs when there is not enough storage available in the database application heap to process the request.
Increasing the IBM DB2 for LUW Database Heap Size

To increase the IBM DB2 for LUW database heap size, complete the following steps:

1. Log out of Metadata Manager.
2. Stop the DB2 database server.
3. From a DB2 command prompt, connect to the DB2 database.
4. To determine the current value of the Application Heap Size configuration parameter (APP_CTL_HEAP_SZ), run the following command:
   ```
   db2 get db cfg for <database_name> | find "APP_CTL_HEAP_SZ"
   ```
5. To increase the size of APP_CTL_HEAP_SZ to 16384 or higher, run the following command:
   ```
   db2 update db cfg for <database_name> using APP_CTL_HEAP_SZ <higher_value>
   ```
6. Restart the DB2 database server.

Configure Permissions and Privileges

Configure the permissions and privileges for the IBM DB2 for LUW database user account for which you provide the user name and password when you create the resource.

The following table lists the schema objects and system tables on which you must configure SELECT permissions for the IBM DB2 for LUW database user account:

<table>
<thead>
<tr>
<th>Schema Objects</th>
<th>System Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tables</td>
<td>SYSCAT.SCHEMATA</td>
</tr>
<tr>
<td>Views</td>
<td>SYSCAT.TRIGGERS</td>
</tr>
<tr>
<td>Indexes</td>
<td>SYSCAT.INDEXES</td>
</tr>
<tr>
<td>Packages</td>
<td>SYSCAT.INDEXCOLUSE</td>
</tr>
<tr>
<td>Procedures</td>
<td>SYSCAT.REFERENCES</td>
</tr>
<tr>
<td>Functions</td>
<td>SYSCAT.TABCONST</td>
</tr>
<tr>
<td>Sequences</td>
<td>SYSCAT.KEYCOLUSE</td>
</tr>
<tr>
<td>Triggers</td>
<td>SYSCAT.COLCHECKS</td>
</tr>
<tr>
<td>Synonyms</td>
<td>SYSCAT.DATATYPES</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.COLUMNS</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.TABLES</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.PROCEDURES</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.PACKAGES</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.TRIGGERS</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.SEQUENCES</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.INDEXES</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.CHECKS</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.VIEWS</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.PACKAGES</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.FUNCDEP</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.TRIGDEP</td>
</tr>
<tr>
<td></td>
<td>SYSCAT.VIEWDEP</td>
</tr>
</tbody>
</table>

In addition, the database user account must have CREATEIN, DROPIN, and ALTERIN privileges on the NULLID schema. Optionally, you can grant the BINDADD privilege to the user account. If you do not add the privileges, you cannot create the resource with the database user account.

Creating an IBM DB2 for LUW Resource

Before creating an IBM DB2 for LUW resource, you must configure the IBM DB2 for LUW source.
To create an IBM DB2 for LUW resource:

1. On the Load tab, click **Actions > New Resource**.
   The Resource Selection window appears.
2. Click **Database Management > DB2**.
3. Click **Next**.
   The Properties page appears.
4. Enter the following information:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name for the resource. The resource appears in the Resources panel with this name. The name must be unique and have from 1 through 256 characters. It cannot include the following characters: /:*&quot;&lt;&gt;</td>
</tr>
<tr>
<td>Description</td>
<td>Description for the resource. Description cannot exceed 4,000 characters.</td>
</tr>
</tbody>
</table>

5. Click **Next**.
   The Configuration page appears.
6. Configure the following resource connection properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>User name</td>
<td>Name of the user account used to connect to the IBM DB2 for LUW database.</td>
</tr>
<tr>
<td>Password</td>
<td>Password for the user account used to connect to the IBM DB2 for LUW database.</td>
</tr>
<tr>
<td>JDBC connection URL</td>
<td>JDBC URL used to connect to the IBM DB2 for LUW database. Metadata Manager uses this URL to verify connection information to the IBM DB2 for LUW database. The JDBC connection URL uses the following syntax: jdbc:informatica:db2://[host_name]:[port];DatabaseName=[database_name]</td>
</tr>
<tr>
<td>Connect string</td>
<td>Native connect string used to create a source connection to the database in the PowerCenter repository. The connect string is the name of the IBM DB2 for LUW database.</td>
</tr>
<tr>
<td>Encoding</td>
<td>Code page for the IBM DB2 for LUW database. The code page for the resource, the Metadata Manager repository, and the machine where the associated Integration Service for Metadata Manager runs must be the same.</td>
</tr>
</tbody>
</table>

7. Click **Test Connection** to test the connection to the source system.
   If Metadata Manager cannot connect to the source system, an error message appears. Correct any error and test the connection again.
8. Click **Next**.
9. To enable profiling information extraction for the resource, select the **Profile Source** option.
10. To add schemas to the Selected Schemas list, select the schema in the Available Schemas list and click **Add**.
11. To add all available schemas, click **Add All**.
12. To remove schemas from the Selected Schemas list, select the schema in the Selected Schemas list and click **Remove**.
13. To remove all schemas from the Selected Schemas list, click **Remove All**.
14. Click **Next**.
   
   The Schedules window appears.

15. To add a schedule, select **Attach a Schedule** and select a schedule in the Schedule list.
   
   If you have not created a schedule, you can assign a schedule to a resource after you create the resource.

16. Click **Finish**.
   
   The resource appears in the Resources panel on the Load tab.

**Troubleshooting for IBM DB2 for LUW**

A resource load from an IBM DB2 for LUW database fails when the associated Integration Service uses a different version of the IBM DB2 client.

Ensure that the IBM DB2 for LUW client version used by the associated Integration Service is the same as the IBM DB2 for LUW database version.

**Reference**

After creating and loading an IBM DB2 for LUW resource, you can view and run data lineage on the metadata objects extracted by Metadata Manager.

**Objects Extracted**

Metadata Manager extracts the following objects from an IBM DB2 for LUW database:

- Schema
- Table
- Column
- Datatype
- Alias
- View
- Index
- IndexColumn
- PrimaryKeyConstraint
- ForeignKey
- UniqueConstraint
- CheckConstraint
- Sequence
- Function
- Package
- Procedure
- TableTrigger
Data Lineage for Database Management Resources

Data lineage includes a database table if data is extracted from or loaded to the table. If the table is included in a join statement but no data is extracted from or loaded to it, the table does not appear in data lineage.

For example, an SQL view includes two tables, CUSTOMER and CITY as described in the following SQL:

```sql
CREATE VIEW SF_CUST_VIEW AS SELECT CUSTOMER.ID, CUSTOMER.NAME
FROM CUSTOMER, CITY
WHERE CUSTOMER.CITY_ID = CITY.ID AND CITY.NAME = 'SFO'
```

Because the view only exposes data from the CUSTOMER table, the CITY table does not display in data lineage for the view. Instead, it displays the CITY table as a Related Catalog Object of the view.

Author

Alison Taylor
Technical Writer

Acknowledgements

The author would like to acknowledge Rajendran Arul Pragasam, Erwin Dral, and Umer Farooque.